

# SUMMARY OF PAST SECTION 309 EFFORTS (2001-2005)

## *Wetlands Assessment*

### Strategy: Enhancement of Wetlands Regulatory Program

Legislation passed by the 2000 Virginia General Assembly gave the Department of Environmental Quality (DEQ) a mandate to revise the existing Virginia Water Protection Permit regulations to enable DEQ to regulate certain activities in nontidal wetlands which were not under federal jurisdiction. DEQ was also given the authority to consider cumulative impacts to water quality and to fish and wildlife resources, and to ensure that all permits that allow wetland impacts address no net loss of wetland acreage and function. During the previous Coastal Needs Assessment it was determined that several significant program enhancements would be necessary to ensure full implementation of this new wetlands authority. Specifically, the Assessment recommended development of a methodology and protocol for 1) assessment of cumulative impacts and 2) for evaluation of compensation requirements and success rates. Absent these protocols, it was felt that the DEQ nontidal wetland regulatory program would not be able to effectively assess whether it had met its stated goals of ensuring that cumulative impacts to water quality and fish and wildlife resources were addressed and minimized and that there was no net loss of wetland acreage and function.

As a result of this identified need, the Virginia Institute of Marine Science (VIMS) received a series of grants to develop a cumulative impact assessment protocol and a compensation monitoring protocol. Although significant delays were experienced due to data format problems, both protocols are nearing completion and implementation.

## *Coastal Hazards*

### Strategy: Enhanced Dunes Management

The dune systems of Virginia are considered a unique and valuable natural resource because of their shoreline erosion defense and habitat qualities. The Commonwealth enacted the Coastal Primary Sand Dune Protection Act in 1980 to help protect these resources and expanded it in 1989 to include sandy beaches above mean high water. A number of gaps have been identified, however, in the management framework for dunes and beaches as well as in the scientific data available to support resource management. To address these gaps, this strategy pursued a multi-pronged approach and resulted in a much better understanding of Virginia's dune and beach resources, and recommendations for improved management.

Results of this strategy included:

- Local dune inventories for each of the localities included in the Coastal Primary Sand Dunes and Beaches Act
- An assessment of changes to dune systems over time and analysis of the factors that affect those changes
- Development of a dune classification system
- An analysis of the connection between primary and secondary dunes
- An expanded dune inventory beyond the nine localities currently covered by the Dune Act
- Monitoring of selected dune systems to determine profile change, vegetation analysis and degree of protection dunes offer to adjacent lands
- A definition and parameters for delineating secondary dunes
- A risk assessment for secondary dune sites from upland development
- An analysis of the shoreline protection and groundwater flow properties of dunes
- Development of a dunes website
- Shoreline evolution reports for 11 localities identified as having coastal primary dunes
- An assessment of supratidal beaches currently outside of state jurisdiction

## ***Cumulative and Secondary Impacts***

### ***Strategy: Enhancement of Shoreland Management***

Development of our waterfronts, while not the largest source of pollution to coastal waters, can be detrimental to some of the very resources that draw people to the waterfront. Increased nutrients from septic systems and lawn fertilizers, along with sediment washing from the land have clouded the water. Increased boat traffic has also affected water quality and helped wash away important marshes and underwater grass beds. Additionally, manicured lawns and hardened shorelines have replaced many of the natural buffers and wetlands that helped clean rainwater runoff, stabilize the shore, and provide important wildlife and fish habitat.

Many localities do not have the capability to assess the impacts of waterfront development on the adjacent aquatic resources. This project was developed to provide localities with both guidance on the impacts of shoreland development to aquatic habitats and a GIS-based tool to evaluate the potential impacts from development along the shoreline. While some adjustments had to be made to the project outcomes because of lack of information availability, this project resulted in:

- A *Better Land Use Planning in Coastal Virginia* guide and brochure
- A draft GIS protocol for evaluating relative impacts to habitat and water quality from shoreland development
- A pilot GIS project that assessed conditions in one embayment in Lancaster County

The Better Land Use Planning in Coastal Virginia materials can be found on the web at:

<http://www.cblad.virginia.gov/Shorelands/cbladShorelandshome.htm>

### ***Strategy: Enhancement of Clean Marina Program***

The Virginia Clean Marina Program is a voluntary recognition program for marinas that take an extra step to protect the Commonwealth's coastal resources. The Virginia Institute of Marine Science (VIMS) has operated the Clean Marina Program (CMP) since 2000. The Virginia Coastal Zone Management Program has been the sole source of funding for this program, the first 3 years through Section 309 funding and the last 2 years through the Coastal Nonpoint Pollution Control Program (Section 6217 of the CZMA). VIMS has sought other permanent long-term sources of support for the program but has been unsuccessful thus far. There is great support for this Program throughout the marine industry and a strong commitment from the Advisory Committee to sustain program activities.

The Program provides technical assistance to marina operators by working closely with them to meet the program criteria. Many marinas have employed innovative practices that have earned them Clean Marina Designation. The Program also educates boaters through participation in trade shows and workshops. At the regional level, the Program has been coordinating closely with Maryland, Delaware, Washington, D.C., and the National Park Service, as members of a regional workgroup, to identify and work on common goals concerning water quality in the Chesapeake Bay. Since 2001:

- 22 marinas have been designated as Virginia Clean Marinas
- 31 additional marinas have pledged to meet the criteria for designation
- Over 25% of the 16,800 boat slips in Virginia are currently participating in the CMP
- 2 issues of the newsletter, *Smart Harbor*, were produced and distributed to over 300 marinas

For more information, including Clean Marina Success Stories, visit the Virginia Clean Marina Program's Web site at: <http://www.virginiacleanmarina.com/>

## ***Special Area Management Plans (SAMP)***

### Strategy: Southern Watersheds

The Southern Watershed Area Management Program (SWAMP) was designed to protect and enhance the natural resources, sensitive lands and water supplies of the Southern Watersheds of the cities of Virginia Beach and Chesapeake. The Southern Watersheds encompass approximately 325 square miles and include the watersheds of Back Bay, the Northwest River and the North Landing River. The program has progressed through several stages over many years, with the Virginia Coastal Zone Management Program becoming involved in 1992. The program is intended to address coastal management problems in three specific areas: existing threats to water quality, habitat loss and water quality degradation due to development, and use/management conflicts.

The program has had the following successes during the period of 2001 to 2005:

- A Technical Advisory Committee has begun implementing the Multiple Benefits Conservation Plan Memorandum of Agreement.
- Educational materials have been developed as part of the north Landing River Water Use Conflict Memorandum of Agreement.
- An educational brochure and signs have been developed as part of the Back Bay Water Use Conflict Educational Package.
- SWAMP research materials have been included in the Chesapeake and Virginia Beach comprehensive plans.
- An Open Space and Agricultural Preservation Program in Chesapeake has resulted in a purchase of development rights program that included prime agricultural lands and conservation lands identified in SWAMP research.
- The “Preserve on the Elizabeth,” a conservation subdivision in the Southern Watershed area based on a site plan designed by Randall Arendt as part of SWAMP, was approved and is under construction.

### Strategy: Dragon Run Watershed

As one of the Chesapeake Bay watershed’s most pristine waterways, the Dragon Run flows forty miles along and through nontidal and tidal cypress swamp situated in portions of Essex, King and Queen, Middlesex, and Gloucester Counties. The Dragon Run plays a central role in the Middle Peninsula’s culture and identity. Natural resources - forestry and farming - have been the bedrock of the watershed’s economy. These land uses, together with extensive swamps and unique natural resources, are the main reasons that the Dragon Run remains wild and secluded.

The Dragon Run’s unique character evokes strong feelings to protect the pristine watershed in both long-time residents and first-time visitors alike. Yet, opinions differ about how to address the threats of encroaching development and habitat fragmentation. An innate difference in point of view between property rights advocates and conservationists centers on how to maintain a pristine watershed into the future. Yet, substantial common ground exists for proactively preserving the Dragon Run for future generations.

The Dragon Run SAMP’s mission is to support and promote community-based efforts to preserve the cultural, historic, and natural character of the Dragon Run, while preserving property rights and the traditional uses within the watershed. While the Dragon Run landscape is primarily undeveloped, changes in land ownership threaten to fragment productive farm and forest land and natural habitat and disrupt the local natural resource based economy. The SAMP is designed to address both the differences of opinion and the common ground that exist concerning the future of the watershed.

This proactive planning effort has resulted in many successes:

- Adoption by the four counties in the watershed of an Memorandum of Agreement that states the goals and objectives of the SAMP
- Establishment of a citizen-driven stakeholder participation process for developing a comprehensive watershed management plan.

- Adoption of the Watershed Management Plan as an addendum to the county's Comprehensive Plan by 3 of the 4 counties
- Development of model zoning and comprehensive plan amendments for each county to consider and to customize to achieve consistency with the principles in the watershed management plan
- Establishment of an annual Dragon Run Day that celebrates landowner stewardship and the watershed's natural cultural and historic heritage.
- Administration of an education and outreach program targeted at giving local decision makers and community leaders a hands-on watershed experience
- Recommendations for management of public and non-governmental organization (NGO) holdings acquired for conservation underway.
- Presentation of sustainable economic development opportunities to local business, governments and landowners underway.
- Establishment of an invasive species initiative made up of a coalition of universities, federal and state agencies, regional government and NGOs.
- Establishment of baseline information on the status of the natural resources and land use planning policies in the four counties.

More information on the Dragon Run SAMP can be accessed via the Web site at:

<http://www.mppdc.com/dragon/index.shtml>

### Strategy: Northampton County

The Northampton County SAMP began in the early 1990s in an effort to protect migratory songbird habitat, public access and water quality. In addition, it sought to foster sustainable economic development in what ranks as one of the poorest counties of Virginia's coastal zone.

Although several program changes were accomplished and reported in the April 2001 Assessment & Strategy, several originally identified program changes were not. Most important among those was adoption of a vegetation ordinance that would restrict removal of existing native shrubs and trees in the County in an effort to protect both song bird habitat and water quality. Unfortunately when the proposed ordinance was brought before the County Board of Supervisors for a vote in the late 1990s, it was defeated. During the 2001 – 2005 period the Coastal Program offered the County a second chance to adopt a vegetation ordinance and three grants were developed. The first two grants (FY 1999 Task 92 and FY 2000 Task 92) were for ordinance development and education efforts and the third (FY 2003 Task 96) was for implementation of the adopted ordinance. Using the FY 99 and 00 grants, the County established a new citizen committee and hired a new planner to guide the development of a revised "Sensitive Natural Resource Area Preservation Overlay District." Multiple public meetings were held, and a brochure developed that explained the purpose of the overlay district in protecting both groundwater and natural vegetation and wildlife communities. Once again an ordinance was brought before the Board of Supervisors for adoption. Once again, the Board failed to adopt the ordinance. The FY 2000 grant had been conditioned such that failure to adopt the ordinance would result in repossession by the Virginia Coastal Program of the plotter purchased with grant funds and withholding of \$25,000 from the FY 2000 grant. Also, due to the County's failure to adopt, the FY 2003 grant was never awarded.

Perhaps the greatest success of the Northampton SAMP has been the increased recognition the area is receiving for its ecological importance – particularly as a critical stopover habitat for migratory birds. As a result of the research conducted under the SAMP, major conservation organizations such as The Nature Conservancy and the US Fish & Wildlife Service are now investing in major protection efforts. Recently the global headquarters office of TNC approved the allocation of about \$13 million to purchase land on the southern tip of the county. In addition, the national office of the USFWS approved the expansion of the Eastern Shore Refuge's acquisition boundary to include all those areas identified as critical songbird migratory habitat through the Northampton SAMP. It may also be fair to say that although the County Board of Supervisors still has not adopted a habitat protection ordinance, the makeup of the Board is now far more supportive of such efforts because of the work conducted under the Northampton SAMP.

# ***Aquaculture***

## **Strategy: Enhancement of Aquaculture Management**

During the last 10 years, The Virginia Coastal Zone Management Program, the Virginia Institute of Marine Science, and the Virginia Marine Resources Commission have undertaken many steps towards a comprehensive aquaculture management program in Virginia including: 1) evaluating potential conflicts between clam aquaculture and submerged aquatic vegetation; 2) the identification of potential conflicts in environmental policies related to aquaculture; 3) the establishment of a general permit for noncommercial shellfish operations; 4) the development of regulations for off-bottom activities; and 5) educational materials related to marine aquaculture.

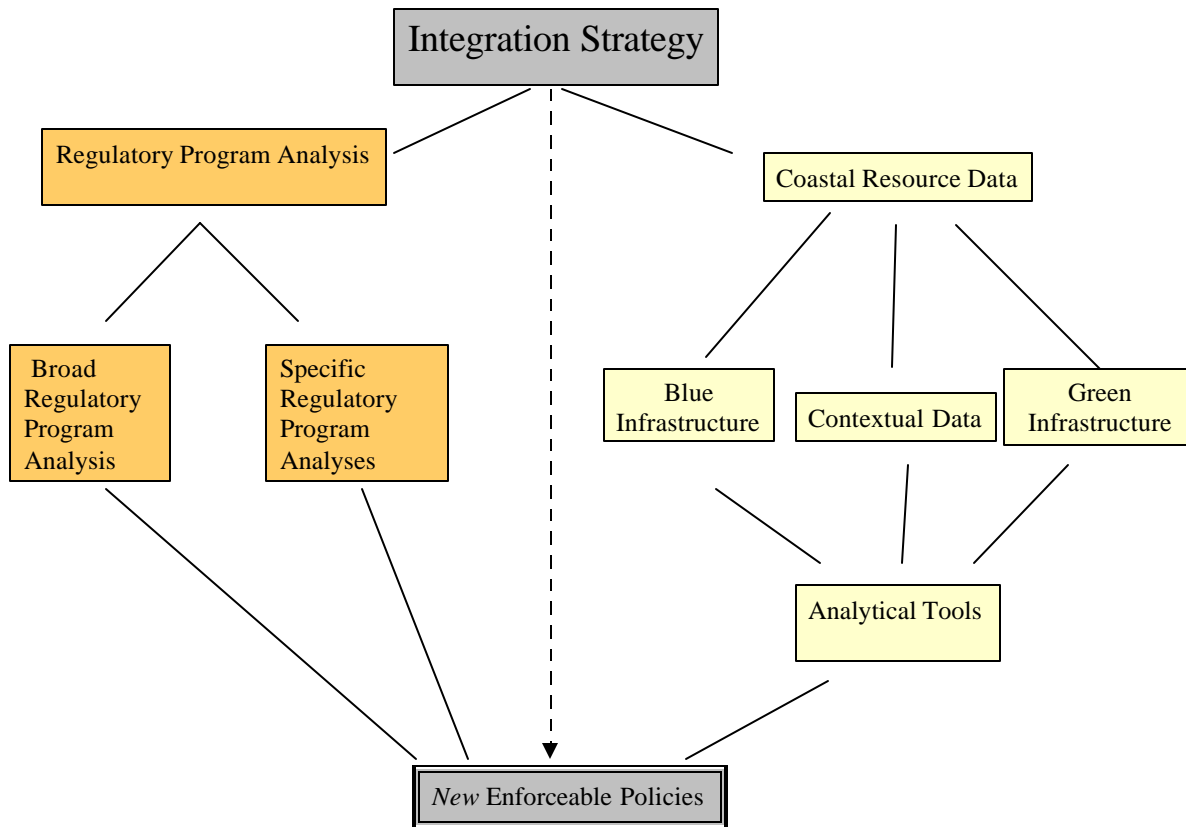
Entering the last 309 funding cycle (2001 to 2005), there were two primary challenges remaining in the development of a comprehensive aquaculture management program including; 1) the development of guidance ensuring aquaculture activities occur in the most appropriate locations which may ultimately be incorporated into the review of permit applications, and 2) the development of guidance/regulations for the integration and coordination of the many aquaculture management programs in the Commonwealth.

During 2001, the General Assembly also passed Joint Resolution HR765 that charges VIMS, VMRC, and other supporting agencies with preparing a management plan for shallow water areas in the Chesapeake Bay to reduce use-conflicts and promote the continued development and long-term sustainability of aquaculture operations. The following is a summary efforts undertaken by VIMS and VMRC towards the development of shallow water management strategy and more effective regulations for the management of clam and oyster aquaculture in the Commonwealth's estuarine and coastal waters.

- Management issues were identified and characterized through meetings and discussions with the Aquaculture Management Advisory Committee
- Based on literature review and extant scientific knowledge and data, environmental suitability criteria for hard clam and oyster aquaculture sites were identified.
- GIS based use-suitability models were developed to locate optimal and suitable aquaculture sites.
- The frequency of occurrence and co-occurrence of various conflicts and issues were assessed based on the GIS use-conflict analysis.
- A thorough review of existing regulatory authorities for aquaculture management were undertaken to identify gaps in the current regulatory environment.
- Management strategies appropriate for various use-conflict scenarios were listed and evaluated for relative effectiveness.
- VMRC drafted an amendment, Water Column Leases for Aquaculture Purposes, which authorizes VMRC to "lease the water column above certain state-owned bottomlands for aquaculture purposes." On April 15, 2004, the Virginia General Assembly approved the amendment to Chapter 16, Title 28.2 of the state code. Once funded, this amendment will provide the aquaculture industry with necessary water rights and protection while minimizing potential conflicts with other user groups and existing natural resources. However, the bill is only effective if the General Assembly earmarks state funding for the specific purpose. As of July 1, 2005, funding was not provided for fiscal year 2006.

## **Integration Strategy Concept**

Overview of the general design of the Integration Strategy, showing the Regulatory Program Analysis and Coastal Resource Data components and how these components should all link together into the development of New Enforceable policies



#### Strategy: Enhancement of Blue Green Infrastructure Data

There is often an apparent disconnect between local land use policies and state water policies that is only exacerbated by continuing to look at each resource separately. The Coastal Program's "Integration Strategy" was developed to create practical linkages among agencies or levels of governments regarding issues dealing with coastal resource management. The Integration Strategy clearly meets two Virginia Coastal Program goals including:

- Goal 9: "To *avoid and minimize coastal resource use conflicts* through research, planning and a forum for coordination and facilitation among government agencies, interest groups and citizens."
- Goal 10: "To *promote informed decision-making* by maximizing the availability of up-to-date educational information, technical advice and scientific data."

To assist in coordinating each agency's management goals/programs for coastal resources in Virginia, we felt we needed an inventory of the important water and land-based natural resources required to support the functioning of our coastal ecosystems. This coastal resource infrastructure would serve as a framework for prioritizing issues, concerns and/or management efforts for coastal resource protection.

With the assistance of Virginia's state agencies, universities, and the planning district commissions, the Virginia Coastal Program has begun using GIS technology to map the "best" remaining blue and green infrastructure in Virginia. These are resources that should be considered in coastal resource management decisions (e.g. rare or sensitive habitat location(s), oyster reefs, a public access site, a large tract of forest land etc.). There is also an understanding that certain "contextual" data (for example: shoreline erosion rates, human

population growth data, and water quality trends) will need to be collected to help analyze our coastal resource data and develop or enhance planning tools.

The Virginia Coastal Zone Management Program is currently contracting with Virginia Commonwealth University for the development of the Blue-Green Mapping Portal to organize and display blue and green infrastructure data layers that meet individual agency needs for coastal resource management. This will support the Coastal Program's efforts to create an online mapping system that would be a web accessible "one-stop shop" for publicly-available coastal resource data.

The following is a list of projects which have generated or will generate coastal resource data to be included in the new Coastal Program Blue-Green Mapping Portal (also see Integration Strategy diagram below).

#### **"Blue" Infrastructure Data Development Includes:**

- *Blue Infrastructure Criteria and Needs Assessment Project (underway):*
  - Outgrowth of discussions among the Blue Infrastructure Advisory Committee
  - Data layers currently available include Anadromous fish streams; Aquaculture sites; Baylor Grounds; Blue crab sanctuary; Nearshore areas adjacent to coastal parks or natural area preserves (from NOAA's Marine Management Areas List); Oyster reefs; Public Access (DGIF); Public beaches (with buffers); Private Leases; SAV beds; SAV restoration goal (185,000 acres); Tidal mudflats and Threatened and endangered waters
  - For further details see: [http://ccrm.vims.edu/blueinfrastructure/bi\\_intro.html](http://ccrm.vims.edu/blueinfrastructure/bi_intro.html)
- *GIS Conversion of MRC Fisheries Data Project (underway):*
  - Provides additional data layers for Blue Infrastructure
  - Conversion of VMRC AutoCad data files to a standard GIS shape file format.
  - Datasets include clam sanctuaries, crab sanctuaries, oyster seed beds, red drum sanctuaries, shellfish management areas, and striped bass sanctuaries.
- *INSTAR (Interactive Stream Resource Assessment)(complete):*
  - INSTAR is an interactive online tool developed by Virginia Commonwealth University's Center for Environmental Studies. INSTAR provides access to an extensive dataset for stream reaches throughout Virginia's coastal zone, including instream habitat and stream geomorphology. INSTAR has the capability to model streams in the coastal zone and assign 'stream health' values. <http://instar.vcu.edu/about.htm>

#### **"Green" Infrastructure Data Development Projects Include:**

##### *Green Infrastructure Priority Maps Project (completed):*

- Based on Maryland's Green Infrastructure Project, the Virginia Landscape Needs Assessment (VANLA) uses land cover data derived from satellite imagery to identify ecologically significant hubs (large tracts of natural areas) and corridors (narrower strips of lands that connect the hubs) that can be prioritized for various protection and management needs.

##### *Green Infrastructure GIS Project (underway):*

- Green Infrastructure Advisory Workgroup composed of key Coastal Partners
- Revising current VANLA using the RESAC land cover data developed by the University of Maryland for the entire state of Virginia.
- Attempt to identify, assemble or create additional geospatial datasets to address the varied conservation interests and needs of all the coastal partners (based on RLA).
- Potential datasets include those related to forest lands, water quality, prime agricultural lands, historical/cultural resources, and lands with recreational value.

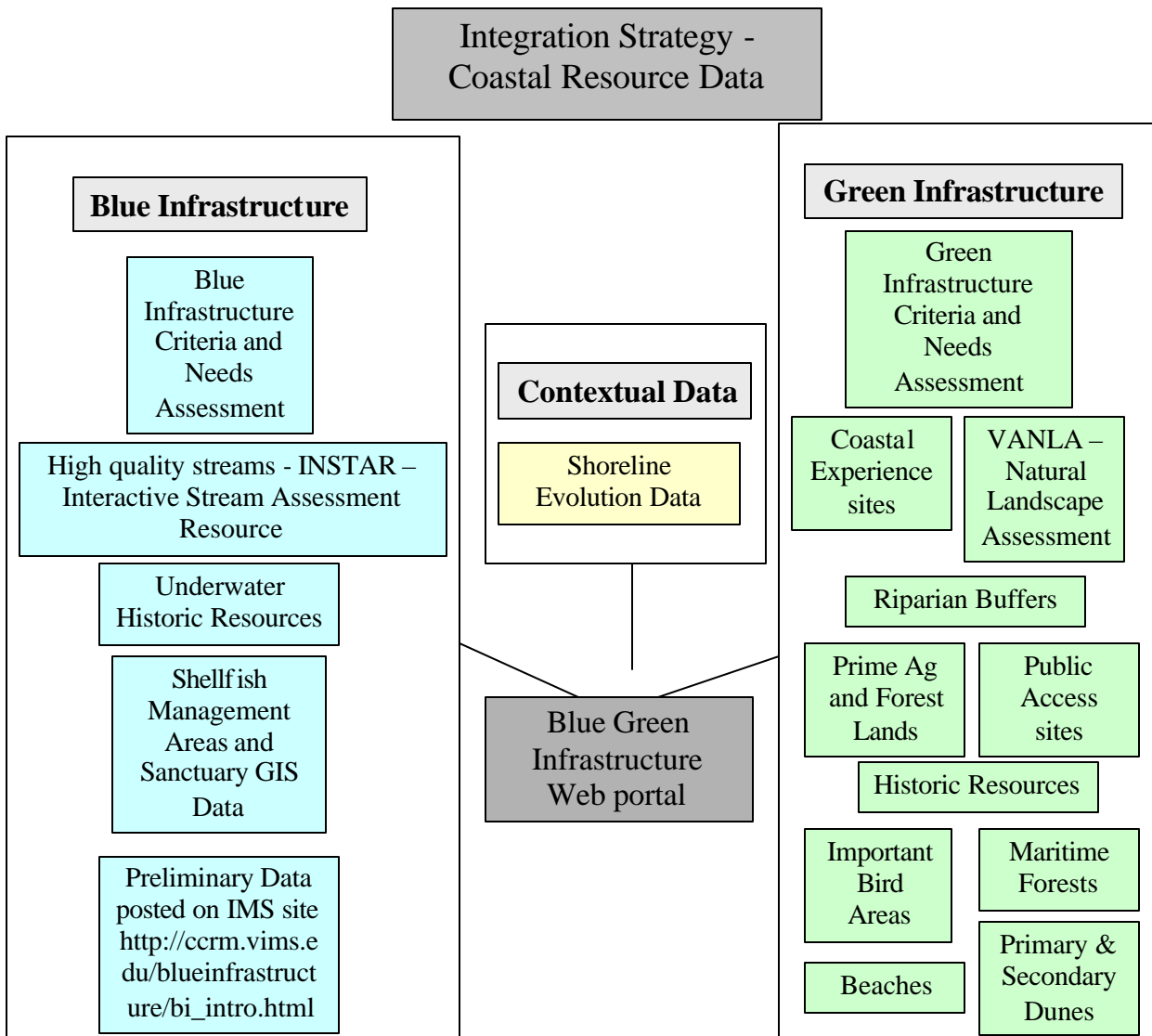
##### *Maritime Forest Inventory and Risk/Restoration Assessment Project (underway):*

- An analytical technique for inventorying and prioritizing coastal maritime forest restoration sites.
- Develop a coastal zone wide inventory of coastal maritime forests.
- Assess the potential risk to these forests and prioritize sites for protection/restoration (identified as the Southern Watersheds).

##### *Important Bird Area Synthesis Project (underway):*



- The Important Bird Areas (IBA) program is an international, science-based initiative to identify, conserve, and monitor sites that provide essential habitat for bird populations using international criteria.
- The Center for Conservation Biology proposes to work with the IBA program to identify and establish a network of conservation sites in coastal Virginia.





### Strategy: Regulatory Programs Analysis

Because Virginia operates a networked coastal program comprised of many individual programs housed in separate agencies, coordination and cooperation to achieve common goals is critical for minimizing the cumulative and secondary impacts of individual management decisions. Managers at the state, federal and local levels have recognized the need to ensure that objectives are consistent, and that decision making is always cognizant of potential unintended consequences of other programs' goals. Through this strategy, several coastal resource topics have been analyzed to identify these unintended consequences and recommendations have been made to fill management gaps or coordinate overlapping management programs. Two of the topics, Enhanced Dunes Management and Enhancement of Aquaculture Management are described in detail in under the Coastal Hazards and Aquaculture sections of this summary. Several initiatives were also undertaken within the topic of improved shoreline management. These included an Analysis of Shoreline Erosion Control report and an Interagency Consensus Document on Shoreline Management. Each of these efforts has resulted in improved coordination and better resource management.